1.0 EXECUTIVE SUMMARY

In April 1995, the Department of Energy (DOE) and the Department of the Navy, as a cooperating agency, issued the Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement. Volume 1 of this document analyzed alternatives for the management of existing and reasonably foreseeable inventories of the Department's spent nuclear fuel through the year 2035. Volume 2 included a detailed analysis of environmental restoration and waste management activities at the Idaho National Engineering and Environmental Laboratory (INEEL). It also looked at long term impacts of spent fuel management on the INEEL. This analysis supported facility-specific decisions regarding new, continued, or discontinued environmental restoration and waste management operations through the year 2005. The term "1995 EIS" throughout this analysis will refer to only Volume 2 of this document.

DOE NEPA implementing procedures (10 CFR Part 1021.330(d)) require that a Supplement Analysis of a site-wide EIS be completed every five years to determine whether the site-wide EIS remains adequate. While the 1995 EIS was not a true site-wide EIS in that several programs were not included, most notably reactor operations, this method was used to evaluate the adequacy of the 1995 EIS. The decision to perform a Supplement Analysis was supported by the multi-program aspect of the 1995 EIS in conjunction with the spirit of the requirement for periodic review.

This Supplement Analysis used four primary methods for determining whether the 1995 EIS remains adequate. 1) Review of all NEPA documentation prepared in the last five years to determine what operations have already received NEPA analysis and where previously existing analysis had been supplemented. 2) Examination of INEEL operations program by program to determine what changes had taken place and whether they were within the analyzed scope of the 1995 EIS. 3) Review of changes, if any, in each environmental discipline that was analyzed in the 1995 EIS

The results of this analysis are as follows:

Program Change Analysis

The majority of the programs and projects addressed in the 1995 EIS have NEPA documentation. A number of facilities and operations rely on NEPA documentation in addition to the 1995 EIS to provide an adequate representation of the environmental impacts of these actions. The only area for further analysis identified for projects in the 1995 EIS is in the D&D program. As stated in the Record of Decision (ROD) for the 1995 EIS, additional analysis will be required before making decisions for the D&D of these facilities.

The Supplement Analysis did not evaluate the adequacy of NEPA documentation for any of the national programs that are managed through DOE-ID or for the Grand Junction Field Office.

Alternatives Analysis

While the 1995 EIS used a cutoff date of 2005 for the analysis, this review has determined that the 1995 EIS provides a bounding analysis for projects beyond 2005. This issue should be reexamined when the next Supplement Analysis is conducted to ensure the continued validity of

this determination. Any changes in programmatic actions will require additional analysis to determine whether the proposed changes are within or outside of the scope of the 1995 EIS.

Environmental Discipline Change Analysis

The change analysis evaluates DOE decisions announced in the ROD. The results of the environmental discipline change analysis indicate that the following additional analyses needs to be completed: Air Resources analysis impact zone should be extended from 50 km in the 1995 EIS to 200 km for some sectors to address stakeholder concerns, the Big Lost River flood plain determination for the INEEL must be finalized, and the Wildfire Environmental Assessment must be completed. From a regulatory perspective a site-wide composite analysis in accordance with DOE O 435.1 is required to be completed. While additional analysis is being recommended, the 1995 EIS was determined to be adequate to support all decisions made in the ROD.

The following summarizes the findings from the Environmental Discipline Change Analysis.

Adverse Environmental Effects Which Cannot Be Avoided

In general, adverse environmental effects that cannot be avoided are less than projected in the1995 EIS. However, additional analysis is still required for both cultural resources and ecology to understand these impacts through completion of the Wildland Fire EA.

Aesthetic and Scenic Resources

Existing analysis is adequate because there are no air quality or visibility issues that are changing the character of the landscape.

Air Resources

Summary of Table 8-1.3.2 and Table 8-1.10.2 Onsite Emissions Impacts of Toxic Air Pollutants

	Amount Analyzed[a] (kg per year)	Total INEEL Emissions (kg per year)	Revised Concentrations ($\mu g/m^3$)	Percentage of Standard	Standard[b] ($\mu g/m^3$)
Beryllium	0.18	0.59	9.2E-04	< 1	$2x10^0$ $\mu g/m^3$
Carbon tetrachloride	268	2,468	2.3E+03	18	$1.3x10^4$ $\mu g/m^3$
Chloroform	11.5	51.68	4.9E+01	< 1	$9.8x10^3$ $\mu g/m^3$
Hydrochloric acid	17500	21,950	1.8E+02	3	$7x10^3$ $\mu g/m^3$

a. This is the amount analyzed in the 1995 EIS for alternative B.
b. Limits are 8-hour time-weighted averages established by either the American Conference of Government Industrial Hygienists or the Occupational Safety and Health Adminstration; the lower of the two is used.

While actual emissions of these pollutants were shown to have exceeded the analyzed amount in the 1995 EIS, health and safety impacts of this level of emissions were shown to be negligible. None of these emissions exceeded occupational exposure limits. Total INEEL emissions are within regulatory requirements. However, no analysis of air impacts has been completed beyond 50 km, it is recommended that analysis be completed for some sectors to 200 km based on stakeholder requests and National Park Service requirements.

Cultural Resources

Existing analysis is adequate as long as the INEEL Cultural Resources Management Plan is implemented and assuming completion of the Wildland Fire EA.

Cumulative Impacts and Impacts from Connected or Similar Actions

Cumulative Impact analysis is adequate except for flooding which may need to be updated using data based on a final flood plain determination.

Ecology

Existing analysis is adequate assuming completion of the Wildland Fire EA and no additional impacts to ecological resources from habitat loss.

Environmental Justice

Existing analysis is adequate because there has been no significant spatial redistribution of minority and low-income population within the region of influence.

Facility Accidents

The existing analysis is technically adequate. However, using available documents it is difficult to compare results of different analyses. There is a new bounding accident for the INEEL that is presented in the HLW & FD EIS.

Impacts to the maximally exposed individual of bounding accidents on the INEEL.

	1995 EIS	HLW & FD EIS	LCF
Hot Fuel Examination Facility fuel handling accident	5.0 rem		1
Seismically induced failure of degraded bin sets after 2095		83 rem	270
Failure of ammonia tank connections		Greater than ERPG-2 at 3,600 m	

Geology

Existing analysis is adequate to support facility design and safety. The general geology supports DOE flood hazard requirements.

Health and Safety

Health effects of increased air pollutants were shown to be negligible. Health effects from ground water analysis are shown to still be negligible.

Summary of Table 8-1.10.5 "Offsite Emissions Impacts of Toxic Air Pollutants" for constituents that exceeded previously analyzed emission levels.

Air Pollutant[a]	1995 EIS Concentrations (ng/m^3)		Revised Concentrations (ng/m^3)		Standard (ng/m^3)[b]	Impact as percent of standard	
	Site Boundary	Public Roads	Site Boundary	Public Roads		Site Boundary	Public Roads
Beryllium	4.0E-04	1.0E-03	1.3E-03	3.3E-03	4.2E+00	<1	<1
Carbon tetrachloride	2.4E+00	2.2E+00	2.2E+01	2.0E+01	6.7E+01	33	30
Chloroform	8.9E-02	8.3E-02	2.6E-01	2.4E-01	4.3E+01	<1	<1
Hydrochloric acid[c]				1.7E-02 mg/m^3	3.8E-01[d] mg/m^3		4.5

a The four air pollutants shown were the only pollutants that exceeded the estimated air emissions in the 1995 EIS. The other pollutant emissions were within the previously anlayzed impacts. A complete list of pollutants and emissions is given in App. 8-1 section 10.

b As in the 1995 EIS, these are the Acceptable ambient concentration increments (AAC) listed in State of Idaho Rules for the Control of Air Pollution in Idaho. These standards apply to incremental (not cumulative) impacts of facilities constructed or modified after May 1, 1994.

c. The ratio was not used for this pollutant. The revised concentrations were obtained from "Operable Unit 7-08 Air Dispersion Modeling and Health Effects from Thermal and Catalytic Oxidation Unit Emissions at the Radioactive Waste Management Complex", EDF-1901, June 25, 2001. Only the portion of the HCl emissions that is greater than in the 1995 EIS are reflected here. Since the locations of the two sources are different, there is not a concern with cumulative effects between the two sources.

d. Acceptable Ambient Concentration (AAC) for hydrochloric acid (24-hour average) (IDAPA 58.01.01)

Summary of Table 8-1.10.4 Radioactive Dose to the Public

Years	Actual Dose to Maximally Exposed Individual (mrem)	1995 EIS Estimated Dose to Maximally Exposed Individual (mrem)[e]	Actual Maximum Potential Population Dose (person-rem)	1995 EIS Estimated Maximum Potential Population Dose (person-rem)[f]
1995[a]	0.018	0.63	0.08	2.9
1996[b]	0.03	0.63	0.2	2.9
1997[c]	0.03	0.63	0.2	2.9
1998[d]	0.007	0.63	0.08	2.9

INEEL Services

Existing analysis is adequate based on the reported resource usage summary.

Summary of Table 8-1.11.1 Usage of Resources

1995 EIS Annual Usage	Most Recent Data
Water usage – - INEEL site: 1.78 billion gal - I.F. Facilities: 79 million gal	Water Usage 2000 - INEEL site: 1.2 billion gallons I.F. Facilities: 71 million gallons

Electricity usage - INEEL site: 303,521 megawatt hrs I.F. Facilities: 31,500 megawatt hrs	Electricity usage 2000 - INEEL site: 156,639 megawatt hrs I.F. Facilities: 27,683 megawatt hrs
Fuel consumption - Heating Oil usage 4.25M gal; Diesel Fuel usage 1.8M gal; Propane gas use 863,000 gal; Gasoline usage 557,000 gal; Jet Fuel usage 73,100 gal; Kerosene usage 33,800 gal; Coal usage - 9000 tons (Natural gas and LNG/CNG was not addressed in the 1995 EIS)	Calendar Year 2000 Actuals Heating Oil use 2.3 M gal Diesel Fuel use 652,800 gal Propane usage 63,121 gal Gasoline usage 381,347 gal Jet Fuel usage 0 gal * Kerosene usage 45,006 gal Coal usage 0 tons LNG/CNG usage 4.6Mbtu Natural Gas usage 16,816 Mcf
Wastewater treatment and discharge systems. Average annual wastewater disposal INEEL site: 144 million gal I.F. facilities: 79 million gal	Wastewater disposal 2000 - INEEL site: 1.16 billion gal** I.F. facilities: 70 million gal

* This change is a result of discontinuing helicopter service on the INEEL.
** The table used in the 1995 EIS for the actual waste water disposal data for the INEEL site for 1995 (142 million gallons) appears to be in error. Based on 1996 data, (1.18 billion gallon disposed), an overall decrease in wastewater disposal is evident over the period of analysis. This water disposal is in accordance with regulatory requirements and no adverse environmental impacts have been observed as a result of this disposal.

Irreversible and Irretrievable Commitments of Resources

Existing analysis is adequate because irreversible and irretrievable commitments of resources have in general been less than projected in the1995 EIS.

Land Use

Existing analysis is adequate because the changes in land use have received appropriate analysis.

Acres of undisturbed land projected to be disturbed: 537 acres (217 hectares)
Approximate acres of undisturbed land actually disturbed including acreage to be disturbed that was identified in a decision document but not yet implemented:

INTEC Percolation Ponds	= 20
ICDF	= 40
SSST	= 20
Expanded Landfill	= 225
CFA Medical and Fire Station	= 7
Gravel Pits Total	= 85
*Silt/Clay Sources	= 290
TRA Sewage Lagoons	= 18
Total	= 705

*An Environmental Assessment for New Silt/Clay Source Development and Use at the INEEL was completed and identified 290 additional acres needed for Silt/Clay extraction.

Mitigation

Existing analysis is adequate. None of the proposed mitigation measures described in the 1995 EIS were required to be implemented.

Noise

Existing analysis is adequate because the number of primary noise sources (cars/buses) has decreased.

Regulatory Requirements

Existing analysis is adequate. Regulatory changes are more restrictive than in 1995

Relationship Between Short Term Use of the Environment and the Maintenance and Enhancement of Long Term Productivity

Existing analysis is adequate because projects implement from the 1995 EIS have had short term environmpental impacts that have been offset by long term enhancement of environmental productivity.

Socioeconomics

Existing analysis is adequate because site service and employment levels are at or below the analysis conducted in the 1995 EIS.

Table 8-1.18.2Projected Employment

	1995 Actuals	2000 (projected in 1995 EIS)	2000 (Actuals based on "INEEL Impacts 2000")
Direct Employment	8,620	8,316	8,155

Traffic and Transportation

Existing analysis is adequate because the total number of shipments to the INEEL is over 5 times less than was analyzed in the 1995 EIS.

Total radioactive shipments estimated in the 1995 EIS (10 years)	17, 145
Total actual radioactive shipments through FY 2000 (5 years)	1,255

Water Resources

Ground Water

The 1995 EIS ground water analyses was adequate to support all decisions made in the ROD. As new information becomes available from completion of the site-wide Composite Analysis in accordance with DOE O 435.1 on impacts to groundwater, DOE-ID will incorporate the ground water analysis into future decisions.

The ground water monitoring results comparing data from the 1995 EIS and maximum ground water monitoring results from 1995 - 1999 is shown in Table 8-1.20.1. The table shows decreased contaminant levels for most contaminants. The contaminants that show increases are for inorganic salts around the Mud Lake area (not attributable to INEEL actions) and for carbon tetrachloride. Carbon tetrachloride is being addressed through the CERCLA program which is the procedural equivalent of NEPA.

The 1995 EIS showed a dose of 0.60 mrem/yr attributable to the LLW disposal facility through the year 2060. It also stated that results of the preliminary risk assessment indicate that contaminants would not reach the INEEL site boundary exceeding Federal primary drinking water standards through 2005. Additional analysis completed since the 1995 EIS (the HLW & FD EIS, WAG 3 RI/FS, and RWMC PA/CA) confirms the adequacy of the 1995 EIS.

Surface Water

DOE-ID will refine the Flood Plain documentation per 10 CFR 1022. The review determined that the flood plain analysis in 1995 was adequate for safe operation of INEEL facilities.

2.0 INTRODUCTION

In April 1995, the Department of Energy (DOE) and the Department of the Navy, as a cooperating agency, issued the Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement (1995 EIS). This document analyzed alternatives for the management of existing and reasonably foreseeable inventories of the Department's spent nuclear fuel through the year 2035. It also included a detailed analysis of environmental restoration and waste management activities at the Idaho National Engineering and Environmental Laboratory (INEEL). This analysis supported facility-specific decisions regarding new, continued, or discontinued environmental restoration and waste management operations through the year 2005.

The Record of Decision (ROD) was signed in June 1995 and documented a number of decisions regarding INEEL operations. In addition to the decisions that were made, decisions on a number of projects were deferred.

DOE National Environmental Policy Act (NEPA) implementing procedures require that an evaluation of site-wide EISs be performed by means of a Supplement Analysis (SA) every five years. The SA is required to contain sufficient information for DOE to determine whether 1) an existing EIS should be supplemented, 2) a new EIS should be prepared, or 3) no further NEPA documentation is required. While the 1995 EIS was not a true site-wide EIS in that a number of programs were not included, most notably reactor operations, this method was used to evaluate the adequacy of the 1995 EIS.

The need for a supplement analysis is triggered by 10 CFR Part 1021, which requires a review of a site-wide EIS every five years. The purpose of the SA is to determine if there have been changes in the basis upon which an EIS was prepared. This provides input for an evaluation of the continued adequacy of the EIS in light of those changes (i.e., whether there are substantial